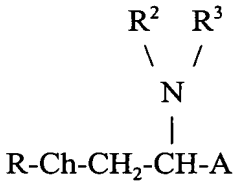
Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) A non-naturally occurring, biologically active compound having the formula F-A



where

R is an organic moiety comprising at least one carbohydrate moiety and/or at least one Pet (pentaerythritol) unit;

Ch is chalcogen;

R2 is hydrogen, or an organic moiety consisting of at least one primarily alkyl moiety and, optionally, one or more spacers;

R3 is -CH2-R3' or -C(=Ch)-R3', where R3' is an organic moiety comprising a steroid moiety, an alkaloid moiety, a terpenoid moiety, a polyunsaturated moiety or a primarily alkyl moiety, and

A is an organic moiety consisting of at least one primarily alkyl moiety and, optionally, one or more spacers; and

at least one of the following conditions applies:

(1) said compound comprises at least one steroid moiety, and/or at least one alkaloid moiety;

(2) R3' comprises at least one polyunsaturated moiety;

(3) R3' is of the form -(linker)(-spacer-T^a)$_a$(-T^b)$_b$, where linker is an aliphatic moiety with not more than 12 non-hydrogen atoms, and consisting of one or more alkyl moieties and/or one or more spacers, a and b are integers each in the range of 0-3, and a+b is in the range of 1-3, except that if a=0, b is at least 2, and T^a and T^b are, independently, organic moieties consisting of at least one *primarily alkyl* moiety and, optionally, one or more *spacers*, which may differ for each of the a instances of T^a and each of the b instances of T^b;

(4) A is -CH(-spacer-R4)-R1 where

(A) R1 is hydrogen, and R4 is hydrogen or an organic moiety consisting of at least one primarily alkyl moiety and, optionally, one or more spacers;

(B) R1 is an organic moiety consisting of at least one *primarily alkyl* moiety and, optionally, one or more *spacers*, and R4 is an organic moiety consisting of at least one primarily alkyl moiety and, optionally, one or more spacers;

(C) R1 is -(spacer cluster)-(organic moiety) and R4 is hydrogen, -(organicmoiety), or -(spacer)-(organic moiety), where each organic moiety is one consisting of at least one primarily alkyl moiety and, optionally, one or more spacers; and

(5) A is -(spacer cluster)-R1, where R1 is hydrogen or an organic moiety consisting of at least one primarily alkyl moiety and, optionally, one or more spacers.

2. (Original) The compound of claim 1 where each of the organic moieties consists of not more than 120 atoms other than hydrogen atoms.

3. (Original) The compound of claim 1 where each chalcogen is oxygen.

4. (Original) The compound of claim 1 in which R2 is hydrogen.

5. (Original) The compound of claim 1 in which R3 comprises at least one strongly lipophilic group.

6. (Original) The compound of claim 1 in which "A" comprises at least one strongly lipophilic group.

7. (Original) The compound of claim 1 where condition (1) applies.

8. (Original) The compound of claim 7 where R3' comprises a steroid or alkaloid moiety.

9. (Original) The compound of claim 7 where R3' comprises a steroid moiety.

10. (Original) The compound of claim 1 where condition (2) applies.

11. (Original) The compound of claim 10 where the polyunsaturated moiety comprises at least one methylene-interrupted pair of alkenic double bonds (-C=C-C-C=C-).

12. (Original) The compound of claim 11 where the carbon skeleton of R3 is the same as the carbon skeleton of the fatty

acyl moiety of arachidonic acid.

13. (Original) The compound of claim 1 in which condition (3) applies.

14. (Original) The compound of claim 13 in which each T^a and T^b is an independently chosen primarily alkyl moiety.

15. (Original) The compound of claim 14 in which b=0.

16. (Original) The compound of claim 14 in which the linker is divalent.

17. (Original) The compound of claim 14 in which the linker is trivalent.

18. (Original) The compound of claim 17 in which R3' is of the form -CH2-CH(-R3'Rem2)-R3'Rem1, and R3'Rem1 and R3'Rem2 are independently chosen organic moieties consisting of at least one primarily alkyl moiety and, optionally, one or more spacers.

19. (Original) The compound of claim 17 in which R3' is of a form selected from the group consisting of

-CH2-CH(-R3b)-(spacerA1)-(spacerA2)-R3"
-CH2-CH(-R3b)-(spacerA)-R3"
-CH2-CH(-(spacerB)-R3b)-(spacerA1)-(spacerA2)-R3"
-CH2-CH(-(spacerB)-R3b)-(spacerA)-R3"
-CH(-R3b)-(spacerA1)-(spacerA2)-R3"
-CH(-R3b)-(spacerA)-R3"
-CH(-(spacerB)-R3b)-(spacerA1)-(spacerA2)-R3"
-CH(-(spacerB)-R3b)-(spacerA)-R3"

where each of spacerA, spacerA1, spacerA2 and spacerB is

independently chosen, and R3" and R3b are primarily alkyl moieties.

20. (Original) The compound of claim 18 in which SpacerA1 is -NH- or -O-, Spacer A2 is -C(=O)-, SpacerA is -O-, and SpacerB is -O-.

21. (Original) The compound of claim 1 in which condition (4) applies.

22. (Original) The compound of claim 19 in which condition (4)(a) applies.

23. (Original) The compound of claim 22 in which R4 is hydrogen, -(primarily alkyl), or -(spacer)-(primarily alkyl).

24. (Original) The compound of claim 21 in which condition 4(b) applies.

25. (Original) The compound of claim 24 in which R4 is -(primarily alkyl), or -(spacer)-(primarily alkyl).

26. (Original) The compound of claim 21 in which condition (4)(c) applies.

27. (Original) The compound of claim 26 in which the organic moieties of R1 and R4 are both primarily alkyl moieties.

28. (Original) The compound of claim 1 in which condition (5) applies.

29. (Original) The compound of claim 28 wherein the organic moiety within the group A as defined by (5) is a primarily alkyl

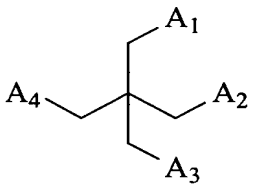
moiety.

30. (Original) The compound of claim 29 wherein the organic moiety within the group A as defined by (5) is strongly lipophilic.

31. (Original) A non-naturally occurring, biologically active compound of the form R-O-Z, where R is an organic moiety comprising a carbohydrate moiety, and Z is an organic moiety comprising a steroidal, *terpenoidal* or alkaloidal moiety.

32. (Original) The compound of claim 31 where Z comprises a steroidal moiety.

33. (Original) A non-naturally occurring, biologically active compound which comprises a Pet unit,



the arms of which are denoted as A1-A4, wherein

(1) one arm of the Pet unit is connected to the O-1 atom of a ceramide and the other arms are connected to hydrogen or an organic moiety; or

(2) one arm of the Pet unit is a -CH2-NH- arm and is connected to an organic moiety consisting of at least one primarily alkyl moiety and optionally one or more spacers, a second arm is a -CH2-Ch- arm and is connected to an organic moiety consisting of at least one primarily alkyl moiety and optionally one or more

spacers, and the remaining arms are connected to hydrogen, or an organic moiety,

with the caveat that the compound does not comprise a phosphate equivalent.

34. (Original) The compound of claim 33 where (1) applies.

35. (Original) The compound of claim 33 where (2) applies.

36. (Original) A non-naturally occurring, biologically active compound defined by the general formula F-AF:

where R2 is hydrogen or an organic moiety; J is an organic moiety comprising at least one sugar unit and/or at least one Pet (pentaerythritol) unit; R3 is of the form $-(Z)_{0-1}$-CF2-R3', Z is a single spacer, -spacer-CH2-spacer-, or a spacer cluster, and R3' is a primarily alkyl moiety.

37. (Original) The compound of claim 36 where there is one Z.

38. (Original) The compound of claim 37 where it is a single spacer.

39. (Original) The compound of claim 38 where Z is -C(=O)-.

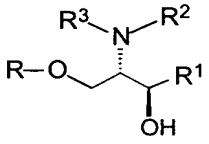
40. (Original) The compound of claim 36 where R3' is strictly

alkyl.

41. (Original) The compound of claim 36 where more than one carbon atom is fluorinated.

42. (Original) The compound of claim 36 where all of the alkanyl carbon atoms of R3' are fluorinated.

43. (Original) A non-naturally occurring, biologically active series A compound represented by the following general formula F-1A:



where R comprises a carboydrate moiety; R1 is primarily alkyl or -(spacer)-primarily alkyl; R2 is hydrogen, primarily alkanyl, or -(spacer)-primarily alkanyl; and R3 is

(A) -Z-R3", where Z is a linker moiety consisting of one or more alkyl moieties and/or one or more spacers; and R3" is a polyunsaturated moiety or an organic moiety comprising a steroidal moiety; or

(B) -Z-CF2-R3", where Z is a linker moiety consisting of one or more alkyl moieties and/or one or more spacers; and R3" is primarily alkanyl, or

(C) -Z(-R3b)-R3", where Z is a trivalent linker moiety consisting of one or more alkyl moieties, including at least one secondary carbon, and/or one or more spacers; where R3b and R3" are the

same or different primarily alkyl moieties.

44. (Original) The compound of claim 43 where if R1 contains non-alkyl moieties, they are hydroxyl moieties.

45. (Previously Presented) The compound of claim 43 in which R2, if organic, is -CH2-R2' or -(C=O)-R2', where R2' is primarily alkanyl

46. (Previously Presented) The compound of claim 43 in which, in R3, Z is a single spacerF, or is of the form spacerF-Z'-spacerL, where spacerF is the first spacer in Z, spacerL is the last spacer in Z, and Z' is the remainder of Z, if any, and may comprise one or more spacers.

47. (Original) The compound of claim 46 in which SpacerF is -C(=O)-, and SpacerL is -O- or -C(=O)-.

48. (Original) The compound of claim 46 in which Z is -C(=O)-, -C(=O)-CH2-CH(-O-)-, or -C(=O)-CH(-NH-C(=O)-)-CH2-O-.

49. (Original) The compound of claim 43 in which

R^1 is a substitution group selected from the group consisting of

$-CH_2(CH_2)_iCH_3$,

$-CH=CH(CH_2)_iCH_3$,

$-CH(OH)(CH_2)_iCH_3$,

$-CH_2(CH_2)_iCH(CH_3)CH_2CH_3$, and

$-CH(OH)(CH_2)_iCH(CH_3)_2$, wherein i is an integer with values from 6 to 20; and

R^2 is a substitution group selected from the group consisting of

-H,

$-CH_2(CH_2)_jCH_3$, and

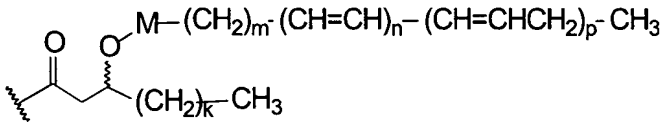
$-CO(CH_2)_jCH_3$, wherein j is an integer with values from 0 to 30.

R^3 is a substitution group selected from the group consisting of

$-CO(CF_2)_mCF_3$,

$-COCF_2(CH_2)_mCH_3$,

$-CO(CH_2)_k(CH=CHCH_2)_2(CH=CHCH_2)_n(CH_2)_mCH_3$,



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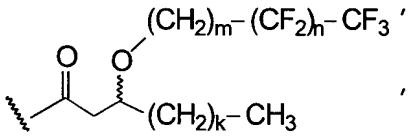

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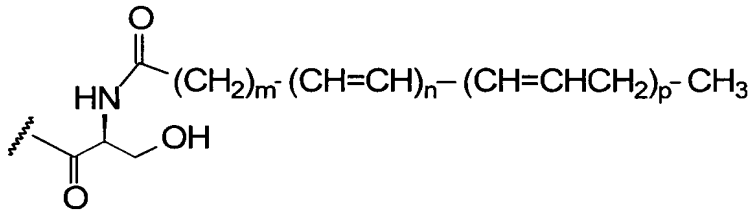

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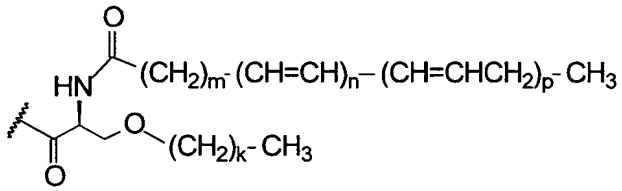

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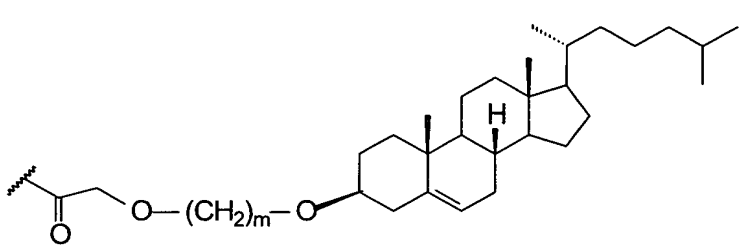
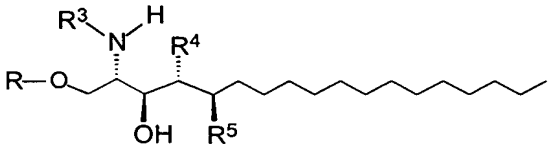
and



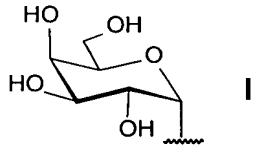
;

wherein M is CH_2 or CO; k and m are independent integers with values from 0 to 30, and n and p are independent integers with values from 0 to 10.

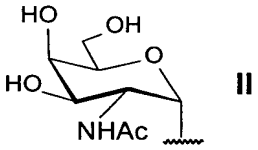
50. (Original) The compound of claim 49, further defined by the following structure:



wherein R is chosen from structure **I** or **II**,



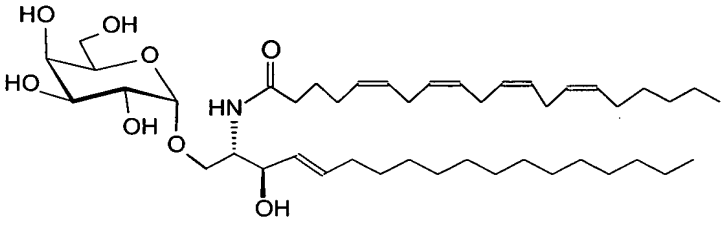
I



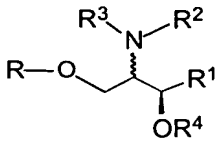
II

R^4 is H or OH, and R^5 is H; or R^4 and R^5 form a double bond.

51. (Original) The compound of claim 50, having the structure



52. (Original) A non-naturally occurring, biologically active compound having the following formula F-4B:



wherein R comprises a carbohydrate moiety;

R1 is hydrogen or -Z1-R1', where Z1 is a linker moiety consisting of one or more spacers and, optionally, one or more alkanyl moieties; and where R1' is primarily alkyl;

R2 is hydrogen, primarily alkanyl, or -(spacer)-primarily alkanyl;

R3 is -Z3-R3', where Z3 is a linker moiety consisting of one or more alkanyl moieties and/or one or more spacers; and where R3' is primarily alkyl, or is an organic moiety comprising a steroidal moiety; and

R4 is hydrogen or -Z4-R4', where Z4 is a linker moiety consisting of one or more alkanyl moieties and/or one or more spacers; and where R4' is primarily alkanyl.

53. (Original) The compound of claim 52 in which Z1 is -X-Y-Z, where X and Z are independently -CH2- or -C(=O)-, and Y is -O-, -NH-, or -S-.

54. (Original) The compound of claim 52 in which, if R1' contains non-alkyl moieties, they are hydroxyl moieties.

55. (Previously Presented) The compound of claim 52 where R2, if organic, is -CH2-R2' or -(C=O)-R2', where R2' is primarily

alkanyl.

56. (Previously Presented) The compound of claim 52 in which R3 is at least partially fluorinated, or comprises a polyunsaturated moiety, or comprises a steroidal moiety.

57. (Previously Presented) The compound of claim 52 in which Z3 is a single spacerF, or is of the form spacerF-Z3'-spacerL, where spacerF is the first spacer in Z3, spacerL is the last spacer in Z3, and Z3' is the remainder of Z3, if any, and may comprise one or more spacers.

58. (Original) The compound of claim 57 in which SpacerF is -C(=O)- and SpacerL is -O- or -C(=O)-.

59. (Original) The compound of claim 58 in which Z3 is -C(=O)-, -C(=O)-CH2-CH(-O-)-, or -C(=O)-CH(-NH-C(=O)-)-CH2-O-.

60. (Previously Presented) The compound of claim 52 in which Z4 is -CH2- or -C(=O)-.

61. (Previously Presented) The compound of claim 52 in which if R4 contains non-alkyl moieties, they are hydroxyl moieties.

62. (Original) The compound of claim 52 which is a compound of series BBB, where

R^1 is a substitution group selected from the group consisting of

-H,

$-X-Y-Z-(CH_2)_iCH_3$,

$-X-Y-Z-(CH_2)_r(CH=CHCH_2)_q(CH_2)_iCH_3$, and

$-X-Y-Z-(CH_2)_rCH(OH)(CH_2)_iCH_3$,

wherein X and Z are independently CH_2 or CO, and Y is O, NH, or S; i and r are independent integers with values from 0 to 30, and q is an integer with values from 1 to 10;

R^2 is a substitution group selected from the group consisting of

-H,

$-CH_2(CH_2)_jCH_3$, and

$-CO(CH_2)_jCH_3$, wherein j is an integer with value from 0 to 30;

R^3 is a substitution group selected from the group consisting of

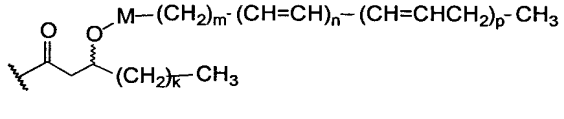
$-CO(CH_2)_mCH(OH)(CH_2)_kCH_3$

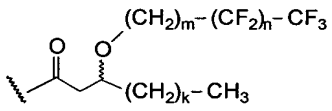
$-CO(CF_2)_mCF_3$,

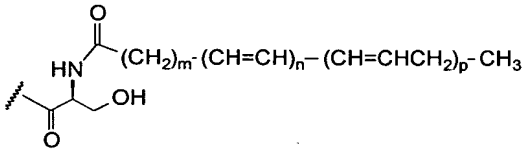
$-COCF_2(CH_2)_mCH_3$,

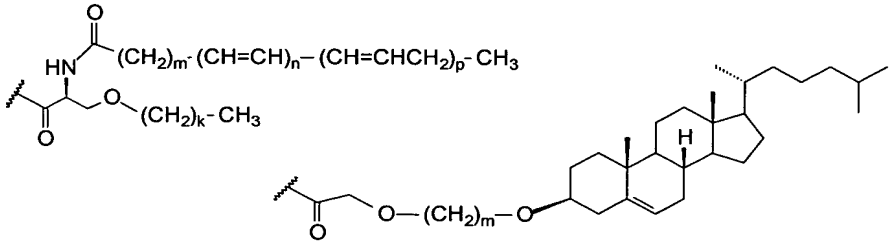
$-CO(CH_2)_k(CH=CHCH_2)_n(CH_2)_mCH_3$, and

a structure of the following:









wherein M is CH_2 or CO; k and m are independent integers with values from 0 to 30, and n and p are independent integers with values from 0 to 10; and

R^4 is a substitution group selected from the group consisting of

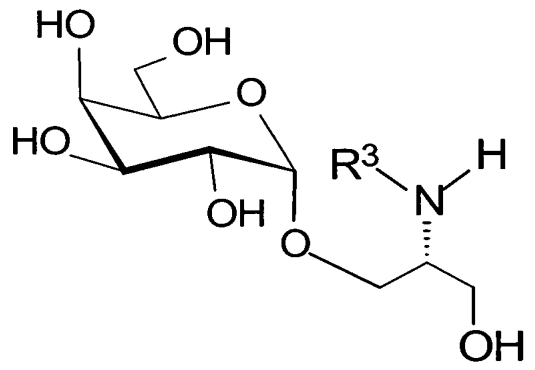
-H,

$-M-(CH_2)_sCH(OH)(CH_2)_tCH_3$, and

$-M-CH(CH_2OH)(CH_2)_sCH_3$

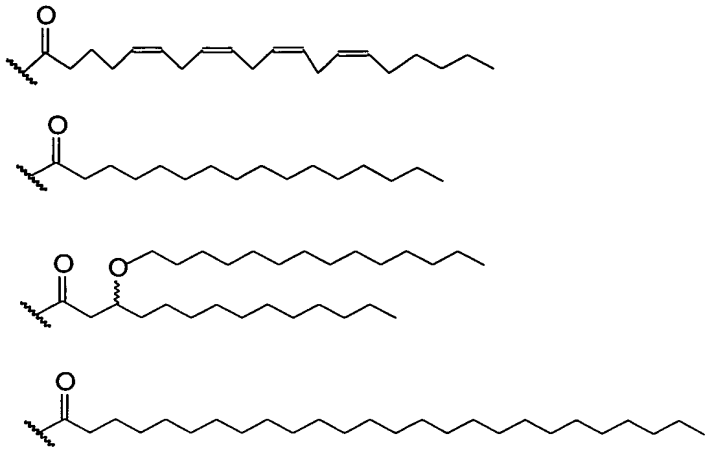
wherein M is CH_2 or CO; and s and t are independent integers with values from 0 to 30.

63. (Original) The compound of claim 62, further defined by the following structure:

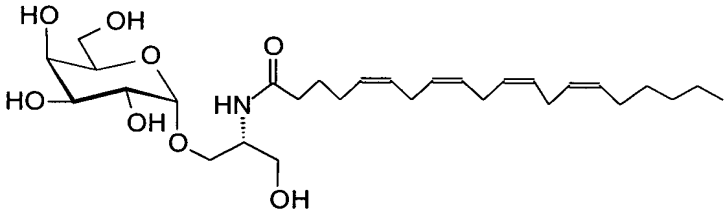


where R3 is as previously defined

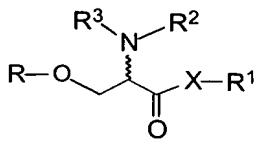
64. (Original) The compound of claim 63 where the R3 therein has the structure



65. (Original) The compound of claim 64 which has the structure



66. (Original) A non-naturally occurring, biologically active compound which is a series C compound having the following general formula F-8C



wherein R comprises a carbohydrate moiety; R1 is hydrogen or is an organic moiety which is substantially linear and primarily

alkyl; X denotes -O-, -NH- or -S-; R2 is hydrogen, primarily alkanyl, or -(spacer)-primarily alkanyl; and R3 is -Z3-R3', where Z3 is a linker moiety consisting of one or more alkyl moieties and/or one or more spacers; and where R3' is primarily alkyl, or is an organic moiety comprising a steroidal moiety.

67. (Original) The compound of claim 66 where, if R1 contains non-alkyl moieties, they are hydroxyl moieties.

68. (Previously Presented) The compound of claim 66 where R2, if organic, is -CH2-R2' or -(C=O)-R2', where R2' is primarily alkanyl.

69. (Original) The compound of claim 66 where R3 is at least partially fluorinated, or comprises a polyunsaturated moiety, or comprises a steroidal moiety.

70. (Original) The compound of claim 66 where Z3 is a single spacerF, or is of the form spacerF-Z3'-spacerL, where spacerF is the first spacer in Z3, spacerL is the last spacer in Z3, and Z3' is the remainder of Z3, if any, and may comprise one or more spacers.

71. (Currently Amended) The compound of claim 70 in which SpacerF is -C(=O)- and SpacerL is ~~preferably~~ -O- or -C(=O)-.

72. (Original) The compound of claim 70 in which Z3 is -C(=O)-, -C(=O)-CH2-CH(-O-)-, or -C(=O)-CH(-NH-C(=O)-)-CH2-O-.

73. (Currently Amended) The compound of claim 66 which is a series CCC compound in which

R^1 is a substitution group selected from the group consisting of

-H,

$-(CH_2)_r(CH=CHCH_2)_q(CH_2)_iCH_3$, and

$-(CH_2)_rCH(OH)(CH_2)_iCH_3$,

wherein r and i are independent integers with values from 0 to 30, and q is an integer with values from 0 to 10,

R^2 ~~preferably~~ is a substitution group selected from the group consisting of

-H,

$-CH_2(CH_2)_jCH_3$, and

$-CO(CH_2)_jCH_3$,

wherein j is an integer with values from 0 to 30,

R^3 is a substitution group selected from the group consisting of

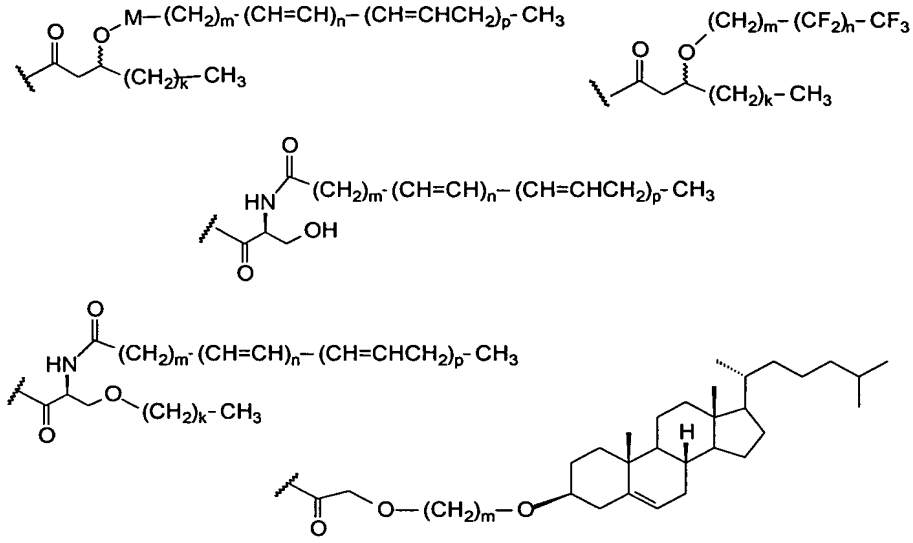
$-CO(CH_2)_mCH(OH)(CH_2)_kCH_3$

$-CO(CF_2)_mCF_3$,

$-COCF_2(CH_2)_mCH_3$,

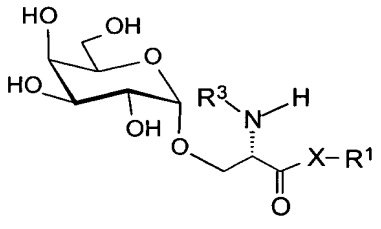
$-CO(CH_2)_k(CH=CHCH_2)_n(CH_2)_mCH_3$, and

a structure of the following:



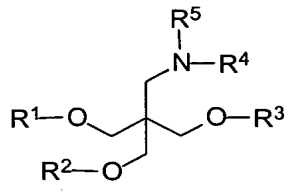
wherein M is CH_2 or CO; k and m are independent integers with values from 0 to 30, and n and p are independent integers with values from 0 to 10.

74. (Original) The compound of claim 73, further defined by the following:



wherein R1, R3 and X are as previously defined.

75. (Original) A non-naturally occurring, biologically active compound which is a series D compound having the general structure F-10D:



wherein R^1 and R^2 is are independently selected from the group consisting of hydrogen, an organic moiety comprising a carbohydrate moiety, and an organic moiety comprising another Pet unit, and at least one of R^1 and R^2 is not hydrogen; R3 is a substantially linear and primarily alkyl moiety; R4 is hydrogen, or a substantially linear, primarily alkanyl moiety; and R5 is -Z5-R5', where Z5 is a linker moiety consisting of one or more alkyl moieties and/or one or more spacers; and where R5' is primarily alkyl, or is an organic moiety comprising a steroidal moiety.

76. (Original) The compound of claim 75 where, if R3 contains non-alkyl moieties, they are hydroxyl moieties.

77. (Original) The compound of claim 75 where R4, if organic, is -CH4-R4' or -(C=O)-R4', where R4' is primarily alkanyl.

78. (Original) The compound of claim 75 where R5 is at least partially fluorinated, or comprises a polyunsaturated moiety, or comprises a steroidal moiety.

79. (Original) The compound of claim 75 where Z5 is a single spacerF, or is of the form spacerF-Z5'-spacerL, where spacerF is the first spacer in Z5, spacerL is the last spacer in Z5, and Z5' is the remainder of Z5, if any, and may comprise one or more spacers.

80. (Original) The compound of claim 79 where SpacerF is -C(=O)- and SpacerL is -O- or -C(=O)-.

81. (Original) The compound of claim 75 where Z5 is -C(=O)-, -C(=O)-CH2-CH(-O-)-, or -C(=O)-CH(-NH-C(=O)-)-CH2-O-.

82. (Original) The compound of claim 75 which is a series DDD compound, where

R^3 is a substitution group selected from the group consisting of

-H,

$-(CH_2)_vCH_3$,

$-CO(CH_2)_vCH_3$,

$-CO(CH_2)_u(CH=CHCH_2)_v(CH_2)_tCH_3$,

$-(CH_2)_uCH(OH)(CH_2)_tCH_3$, and

$-CO(CH_2)_uCH(OH)(CH_2)_tCH_3$,

wherein t and u are independent integers with values from 0 to 30, and v is an integer with values from 1 to 10.

R^4 is a substitution group selected from the group consisting of

-H,

$-CH_2(CH_2)_sCH_3$, and

$-CO(CH_2)_sCH_3$ wherein s is an integer with values from 0 to 30.

R^5 is a substitution group selected from the group consisting of

$-CO(CH_2)_mCH_3$,

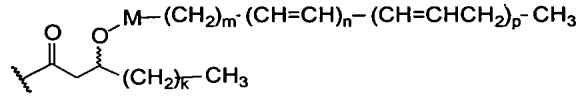
$-CO(CH_2)_mCH(OH)(CH_2)_kCH_3$

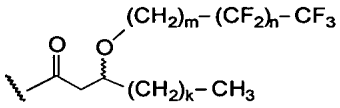
$-CO(CF_2)_mCF_3$,

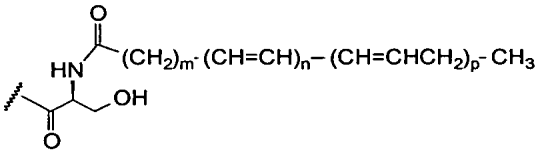
$-COCF_2(CH_2)_mCH_3$,

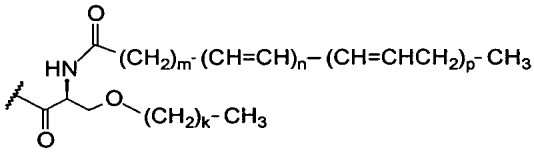
$-CO(CH_2)_k(CH=CHCH_2)_n(CH_2)_mCH_3$, and

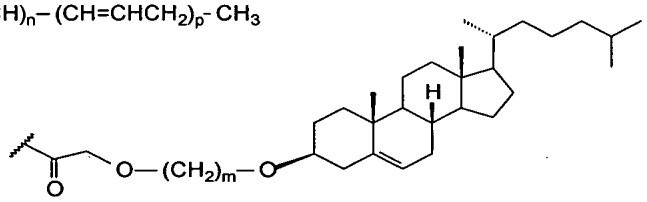
a structure of the following:







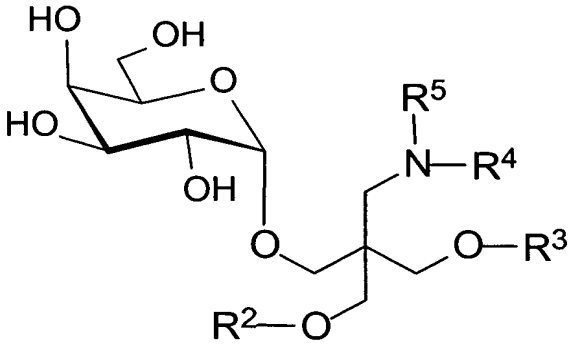




wherein M is CH_2 or CO; k and m are independent integers with values from 0 to 30, and n and p are independent integers with values from 0 to 10.

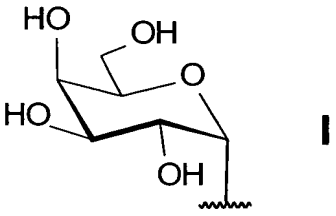
83. (Original) The compound of claim 82, further defined by the

following:



wherein

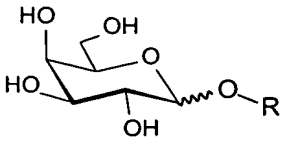
R^2 is hydrogen or α-D-galactopyranosyl residue (**I**),



I

and R3, R4 and R5 are as previously defined.

84. (Original) A non-naturally occurring, biologically active compound which is a series E compound defined by the following structure F-12E:



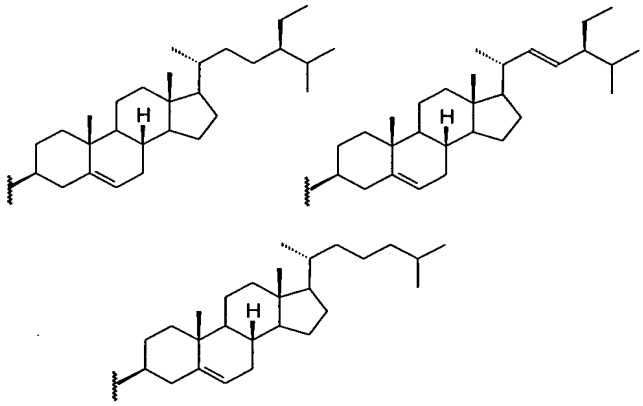
wherein R is a residue of a steroid, terpenoid, or an alkaloid.

85. (Original) The compound of claim 84 where R is a residue of a terpenoid.

86. (Original) The compound of claim 85 where the terpenoid is a monoterpenoid, sesqiterpenoid, diterpenoid, or triterpenoid.

87. (Original) The compound of claim 84 where R is a residue of a steroid.

88. (Original) The compound of claim 87 where R is selected from the group consisting of:



89. (Original) The compound of claim 84 where R is the residue

of an alkaloid.

90. (Original) The compound of claim 89 where the alkaloid is an immunomodulatory alkaloid.

91. (Original) The compound of claim 89 where the alkaloid is an antitumor alkaloid.

92. (Previously Presented) The compound of claim 1 where the carbohydrate moiety is a monosaccharide.

93. (Previously Presented) The compound of claim 1 where said carbohydrate moiety comprises at least one sugar unit which is hexosyl, pentosyl, or nonosyl.

94. (Original) The compound of claim 93 in which each sugar unit is hexosyl, pentosyl or nonosyl.

95. (Original) The compound of claim 94 in which each sugar unit is (a) galactose, glucose, mannose or fucose, (b) a deoxy or N-acetyl derivative of (a), of (c) a sialic acid.

96. (Previously Presented) The compound claim 1 where the inner sugar unit is galactose.

97. (Original) The compound of claim 96 where the inner sugar unit is alpha-galactose.

98. (Original) A compound selected from the group consisting of compounds **1-5** in Fig. 11, **8-13** in Fig. 12, and **033** in Fig. 31.

99. (Previously Presented) A pharmaceutically acceptable composition comprising at least one compound according to claim

1.

100. (Original) The composition of claim 99, where said compound has immodulatory activity, and further comprising at least one immunomodulatory agent which is not one of said compounds.

101. (Original) The composition of claim 100, where at least one such immunomodulatory agent is an immunogen.

102. (Previously Presented) The composition of claim 100, where at least one such immunomodulatory agent is an adjuvant.

103. (Original) The composition of claim 102, where said adjuvant is selected from the group consisting of lipid A, lipid A analogues, CpG-containing oligonucleotides, muramyl dipeptides, sitosterols, alum, and QS-21.

104. (Original) The composition of claim 99, further comprising at least one antiviral, antibacterial, antiparasitic or antitumor agent other than said compound.

105. (Previously Presented) The composition claim 99, in liposomal form.

106. (Cancelled)

107. (Previously Presented) A method of protecting a mammalian subject against a virus, microbial infection, parasite or cancer which comprises administering to the subject a pharmaceutically effective amount of a compound according to claim 1 which has pharmaceutical activity against such virus, microbial infection, parasite, or cancer.

108. (Original) The method of claim 107 wherein protection is against a virus.

109. (Original) The method of claim 108 wherein said virus is HIV-1.

110. (Original) The method of claim 107 wherein protection is against a cancer.

111. (Original) The method of claim 110 which further comprises administration of an immunogen comprising a tumor-associated epitope.

112. (Original) The method of claim 111 where said immunogen comprises a MUC1 epitope.

113. (Original) The method of claim 111 where said immunogen comprises a Tn, TF, sialyl Tn, sialylTF, F1-α, Globo H, Fucosyl GM1, or GalNAc GM1 epitope.

114. (Original) The method of claim 110 wherein said cancer is a melanoma.

115. (Original) The method of claim 107 wherein protection is against a microbial infection.

116. (Original) The method of claim 115 wherein the microbial infection is a malaria infection.

117. (Original) The method of claim 115 wherein the microbial infection is a tuberculosis infection.

118. (Previously Presented) A method of protecting a subject

against an immune disase or an inflammation which comprises administering an immunoinhibitory amount of a compound according to claim 1.

119. (Original) The method of claim 118 where said protection is against an autoimmune disease.

120. (Original) The method of claim 119 wherein said autoimmune disease is diabetes.

121. (Original) The method of claim 119 wherein said autoimmune disease is asthma, eczema, multiple sclerosis or rheumatoid arthritis.

122. (Original) The method of claim 118 where said protection is against inflammation.

123. (Previously Presented) The method of claim 107 further comprising administering a pharmaceutically effective amount of at least one immunomodulatory agent which is not one of said compounds.

124. (Original) The method of claim 123, where at least one such immunomodulatory agent is an immunogen.

125. (Original) The method of claim 123, where at least one such immunomodulatory agent is an adjuvant.

126. (Original) The method of claim 125, where said adjuvant is selected from the group consisting of lipid A, lipid A analogues, CpG-containing oligonucleotides, muramyl dipeptides, sitosterols, alum, and QS-21.

127. (Previously Presented) The composition of claim 107, further comprising a pharmaceutically effective amount of at least one antiviral, antibacterial, antiparasitic or antitumor agent other than said compound.

128. (Previously Presented) The compound claim 1 which has immunostimulatory activity.

129. (Original) A method of stimulating the immune system of a mammalian subject which comprises administering to said subject an immunostimulatory amount of the compound of claim 128.

130. (Original) The method of claim 129 which further comprises administering to the subject an immunologically effective amount of an immunogen, the immune response to said immunogen being enhanced by said compound.

131. (Original) The method of claim 130 in which the immunogen is a disease-associated immunogen and the subject suffers from that disease.

132. (Original) The method of claim 131 in which the immunogen is a tumor-associated immunogen.

133. (Previously Presented) The method of claim 130 in which the immunogen comprises a carbohydrate epitope.

134. (Original) The method of claim 133 in which the immunogen comprises a Tn, TF or sialyl-Tn epitope.

135. (Previously Presented) The method of claim 130 in which the immunogen comprises a peptide epitope.

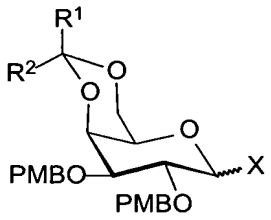
136. (Original) The method of claim 135 in which the immunogen comprises a MUC1 epitope.

137. (Previously Presented) The method of claim 129 in which the compound is delivered by means of a liposomal formulation.

138. (Previously Presented) The method of claim 129 in which the immunogen comprises a strongly lipophilic group.

139. (Previously Presented) The method of claim 129 in which the immunogen is delivered by means of a liposomal formulation.

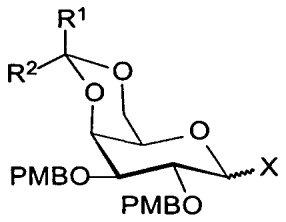
140. (Original) A galactosyl donor illustrated by the following structure:



wherein X represents a leaving group including, but not limited to, halogen, $-OC(NH)CCl_3$, -SR, SO_2R, $-O(CH_2)_3CH=CH_2$, $-P(OR)_2$, and $-P(O)(OR)_2$ wherein R is an alkyl or aromatic group.

141. (Original) A process of making an α-GalCer analogue comprising an aglycon, said aglycon comprising at least one double bond, which comprises the following steps:

a) carrying out a glycosylation reaction, in the presence of a Lewis acid as a catalyst, by using the following glycosyl donor:

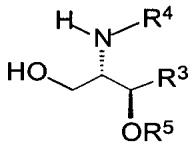


wherein

X represents a leaving group including, but not limited to, halogen, $-OC(NH)CCl_3$, -SR, SO_2R, $-O(CH_2)_3CH=CH_2$, $-P(OR)_2$, and $P(O)(OR)_2$, wherein R is an alkyl or aromatic group;

R^1 and R^2 are independently hydrogen atom, alkyl group, or aromatic group;

and the following glycosyl acceptor:



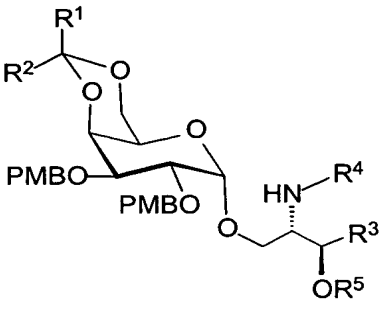
wherein

R^3 is hydrogen, or an alkyl or alkenyl group, substituted or unsubstituted;

R^4 is an amine protecting group or an fatty acyl group; and

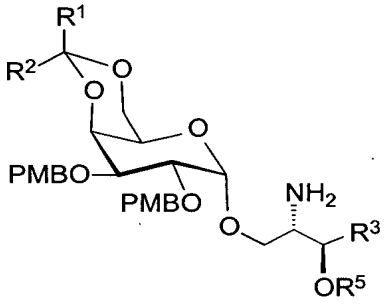
R^5 is a hydroxyl protecting group;

to provide the following glycoside:



wherein R^1 to R^5 are defined as above;

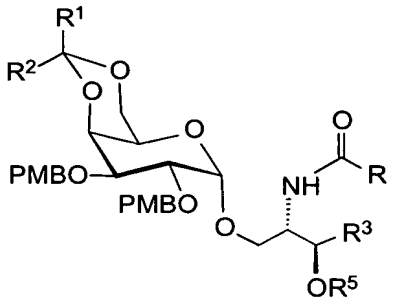
b) removing the amine protecting group R^4, when applicable, in the product formed in step a), to give the following free amine:



wherein

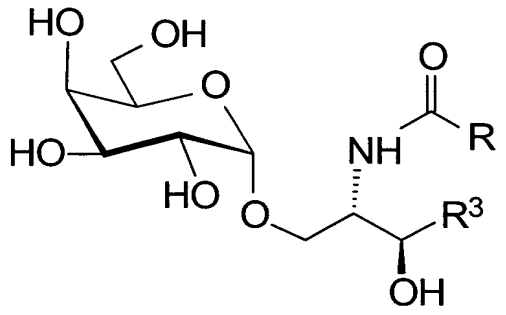
R^1 to R^5 are defined as above;

c) introducing a fatty acyl group at the amine position of the product formed in step b), in the presence of a conventional coupling reagent, to give:



whereinR is an alkyl or alkenyl group, substituted or unsubstituted, and R^1 to R^5 are defined as above;

d) deprotecting the protecting groups R^5, PMB, and R^1R^2CH acetal/ketal at 4,6-*O*-position in the product formed in step c) are deprotected in a non-preferential order to give the α-GalCer analogue of the following structure:



wherein R and R^3 are independently alkyl groups, with at least one group carrying at least one double bond.

142. (Previously Presented) The method of claim 141 in which step (d) is carried out, with respect to at least one of the

protecting groups (R^5, PMB and R^1R^2CH acetal /ketal), before step b).

143. (Previously Presented) The compound of claim 1 which has a molecular weight of less than 10,000 daltons

144. (Previously Presented) The compound of claim 143 which has a molecular weight less than 5,000 daltons.

145. (Previously Presented) The compound of claim 143 which has a molecular weight , less than 2,500 daltons

146. (Previously Presented) The compound of claim 143 which has a molecular weight less than 1,000 daltons.

147. (Cancelled)

148. (New) The compound of claim 1 in which R is an organic moiety comprising at least one carbohydrate moiety and Ch is oxygen.

149. (New) The compound of claim 148 in which the carbohydrate moiety is galactose.

150. (New) The compound of claim 1 in which A comprises at least one carbon-carbon double bond.

151. (New) The compound of claim 1 in which A comprises at least one hydroxyl group.

152. (New) The compound of claim 1 in which A is $-C(OH)-C=C-(CH_2)_{12}-CH_3$.

153. (New) The compound of claim 1 in which R2 is hydrogen.

154. (New) The compound of claim 1 in which R3 is -C(=O)-R3', and R3' is an organic moiety comprising a polyunsaturated moiety.

155. (New) The compound of claim 154 in which R3' comprises at least two methylene-interrupted double bonds.

156. (New) The compound of claim 155 in which R3' is an (n-6) methylene-interrupted polyunsaturated moiety.

157. (New) The compound of claim 156 in which R3' is $-(CH_2)_3-(CH=CH-CH_2)_4-(CH_2)_3-CH_3$.

158. (New) The compound of claim 1 in which
R is galactose,
Ch is oxygen,
R2 is hydrogen,
R3 is -C(=O)-R3', where
R3' is $-(CH_2)_3-(CH=CH-CH_2)_4-(CH_2)_3-CH_3$, and
A is $-C(OH)-C\equiv C-(CH_2)_{12}-CH_3$.